Developing academic language and thinking skills with English language learners,
Sessions A & B

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The Big Three:

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The eight steps in the reading process:[1]

1. Our optic nerve transmits squiggle signals to the brain
2. Our brain translates squiggles to letters, associated to sounds
3. We translate that result into our lexicon: each individual meaning and a discourse community meaning
4. We apply our narrative structure to the internal logic of the text, at the sentence, paragraph, section or chapter, and meta-textual level, inferring, predicting, mentally summarizing, etc. as needed.
5. We give primacy of the text meaning to the author.
6. We access our personal knowledge and experience to inform the text meaning as much as possible (but keep ourselves separate).
7. We often function in a reading group, which is governed by particular discourse rules and learning assumptions and expectations.
8. We enact our understanding by completing some task (writing a response, answering particular types of school questions, and so forth).

Linguistic issues:
  - The challenge of developing clear attention to school-related sense input
  - Impact of pre-reading skills mismatch
  - Languages have different sounds, especially vowels
  - Vocabulary
  - CALP[2] structures
  - Sociolinguistic[3] processes: narrative, learning task familiarity, disempowerment, cultural learning style, academic support at home, different background knowledge and experience, dialect and register difference, limited vocabulary in English (and potentially the native language as well)

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[1] Adapted from: p. 126, *Beneath the Surface: the hidden realities of teaching culturally and linguistically diverse young learners K-6*, Pransky, K, '08, Heinemann
[2] Cognitive Academic Language Proficiency: i.e. cognitive tasks such as inferring, analyzing, persuading, etc; academic language with its complex linguistic and syntactic forms; and proficiency in using the language in academically appropriate ways
[3] the study of the affects of culture and social groupings on language development, acquisition, and usage

Memory: far more central than we might think

The difference between:

Semantic

Episodic

Why does it matter?

The difference between

Long-term

Working

Why does it matter?

Larger chunks of language:
Syntax and comprehending academic text at the sentence, paragraph, and macro-text levels

What exactly DO we mean
when we say Academic language?

What are the characteristics that distinguish one from the other?

Academic language	Narrative and conversation

Academic Language: you know it when you see it, but what are its characteristics?[45]

Academic	Narrative and conversation
Static, using passive verbs	Active, using action verbs
Amounts and quantities	Physical descriptions, referring to size of objects & people
Nominalizes verbs (turns verbs into nouns, most commonly using 'tion/-sion' and '-ment'), turning them into actions and processes separated from human participants	More concerned with people, people as agents and not processes, and therefore little nominalization
Very high noun to verb count	Higher verb count than academic language
Demonstrative pronouns summarizing complex concepts	Demonstrative pronouns refer to a person or thing
Referent nouns are farther from the first occurrence, and often require some type of inference to identify the reference	Referents are often pronouns and are close to the original occurrence
High incidence of relative clauses, conveying information about the noun referents	High number of adverbial clauses, explaining the reasons and causes for actions
Longer, multi-syllabic words with precise nouns and labels	Shorter words and generalized, less explicit content
Complete sentences with multiple clauses or phrases	(in conversation) fragmented sentence structure
Descriptive or explicatory	Frequent questions and/or dialogue

The task: consider the information above, look for a way to synthesize it into a sweeping generalization, and write that generalization on the lines supplied below:

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[4] Based upon Biber D, Conrad S, & Reppen R, 1998, *Corpus linguistics: investigating language structure and use*, Cambridge University Press, UK

[5] There are many registers and ways to categorize written and spoken language. Therefore this table presents a number of generalizations, which could be more precise and accurate if broken down into more specific categories

Linguistic demands of academic English, by content area:

*Each subject area features particular characteristics when considering the linguistic academic demands of the discipline. This is good news for us. **Once we're aware of them, we can begin to point them out to students***:

Content area: Mathematics

- **Vocabulary & semantics:**
  - o **Multiple terms for the same thing**: [add, plus, combine, put together, increased by], [subtract, decreased by, take away, minus, less]
  - o **Common *words* with specific mathematical meanings**: (i.e. set, point, field, table, plot) *Watch for these and develop an awareness of them so that we can explicitly explain the difference when they occur.*
  - o **Conceptually dense words**: (i.e. coefficient, exponent, least common multiple) These are *particularly difficult because of the complex meaning of the words*.
  - o **Symbols represent concepts**, analogous to the function of words in prose
- **Syntax**:
  - o **Word order** [by what percent is 16 increased to make 24]?
  - o **Passive verbs** [10/5 can be renamed as 2]
  - o **Comparatives** (greater than/less than, *n* times as much, as…as, -er than
  - o **Prepositions** (by, -multipied by, increased by, divided by, divided into
  - o **Prepositions and word order** (take one third of, decrease by one third, decrease to one third, one third less than, less than one third
  - o **Multiple ways syntactically** to communicate one semantic notion
  - o **Logical connectors** (if…then, because, for example, consequently)
- **Multiple clauses and phrases**
  - o The chart shows the maximum amount of three pollutants [that] a light-duty truck may emit per mile.
- **Discourse**
  - o Lack of redundancy and paraphrase
  - o Conceptually packed

- Are of high density
- Require up & down, as well as left to right eye movements
- Require slower reading rate
- Require multiple readings
- Use a variety of symbols, as well as charts and graphs
- Lack of one-to-one correspondence between symbols and words (The number is 5 less than the number b: [a=b-5]).
- High frequency of charts and graphs
- Lack of context

Content area: Social studies
- **Vocabulary**
  - **Abstract nouns** that refer to cognitively demanding concepts (democracy, representation)
  - **Culture-specific vocabulary** (i.e. have no broader context and therefore often lacking the background knowledge, such as 'infidel' or 'caste system')
  - **Specialized vocabulary** (monarchy, revolution)
- **Syntax**
  - **Long, complex embedded clauses** (He explored a large area of what was to become the Southeastern United States.)
  - **Passives and impersonal structures** (crops such as coffee, cotton, and tobacco are cultivated by resident labor.)
  - **Unclear referents** (Would it be difficult to move to a new place? What might you like about it?) *'It' is difficult to define in this case.*
  - **Unreal past conditions** (What might have happened had Paul Revere not ridden that evening?)
- **Discourse**
  - **Connectors indicating relationships among clauses and phrases:**
    - **Sequence** (initially, subsequently, after that, finally)
    - **Cause/effect** (as a result, leads to, causes, therefore, in order to)
    - **Compare/contrast** (similarly, whereas, on the other hand, however, although)
- **Rhetorical patterns**
  - **Generalization/examples** (Their traditional lifestyle has disappeared; they live in modern homes, their food comes from the store, and most communities have TV). If students don't know that the last three clauses are related to the first, they're lost.
  - **Definition/ classification** (An island is a landform that is surrounded by water.)

- o **Time relationships** (Racial relationships to this day have been affected by decisions made by that council.)

Content area: Science
- • **Vocabulary**
- • Large quantity of **specialized vocabulary** (mitochondria, cell membrane, gravitational field)
- • **Common words with specific scientific meanings** (power, energy, pole, table, mass, plate, compound)
- • **Vocabulary from Latin or Greek roots with affixes** (physics, physical, physicist, geophysics, geometry, geothermal)
- • **Syntax**
- o **Passives and impersonal structures** (Many theories *have been* reliably *replicated*.)
- o **Multiple embeddings** (Growing a new plant from another part of a plant is a process [that is] called vegetative propagation.)
- o **Long noun phrase groups** (The work was done by a government energy conservation project.) – English allows up to four nouns to be strung together with no indication of how they're related.
- o **Discourse**
    - o **Logical connectors** (if, consequently, therefore, because, for example, in addition)
    - o **Rhetorical patterns** (time order, list structure, compare/contrast, cause/effect, problem/solution)

Content area: Language arts
- • **Vocabulary**
- o **Literary words**, **phrases, and images:** *("When Liyana considered the echoes bouncing off the walls of Jerusalem, she felt like the dot on an* i *in an American alphabet book for babies. Nearly invisible."[6])*
- o **Native language interference** (Interpreting: I *assisted* at the library as I *attended* the library.)

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[6] p. 244, Shihab Nye, N, '97, *Habibi*, Simon Pulse, New York, NY, ISBN 0689825234

The crevasse

Direct, explicit vocabulary instruction

© Scott McGee

Instruction about the metacognitive behaviors of proficient readers

Job #1: Honing in on the basic elements of English syntax

The 3 anchors we must find in English text:

- ➢ Subject
- ➢ Verb
- ➢ Object

Why do we need to do this?

After we've determined what they are, we must ***restate those 3 anchors in our own words*** and ***form an image in our minds***

Examples to practice

ξ Gerald walked quickly but forcefully to the playground.

ξ After the meeting, Candice felt happier.

ξ The results were shared by the experimenters.

ξ Even though he was angry, the principal talked calmly and quietly to the student body.

ξ While hardly at the zenith of his career, the performer still sang with clarity and intensity.

ξ Carol, known for her work in the field of pediatrics, still found herself devastated by the news that the boy was dead.

ξ The angry mob, although small in number, converged upon the state building in violent protest.

Our friends in this effort

- Punctuation, and particularly commas
- Cohesion devices, such as subordinating conjunctions and prepositions
- Verb tense (passive means we expect the object to come first)
- The native language, often helpful to students as they restate these ideas
- Graphic organizers, which allow us to take notes and continually restate, review, and look for connections

Two clauses of equal weight using a coordinating conjunction

- Cream puffs are sweet while potato chips are salty.

- Puppies are young dogs and kittens are young cats.

- The planets don't create their own heat and light, but the sun does.

What, in each case, is the coordinating conjunction?

Job #2: start adding in the supporting ideas and details
After we've restated the main idea, then we can mark up the text and consider how the prepositional phrases, subordinate clauses, etc. relate to the main clause.

Job #2: Remember these? Now let's add in the additional ideas

- Carol, known for her work in the field of pediatrics, still found herself devastated by the news that the boy was dead.

- The angry mob, although small in number, converged upon the state building in violent protest.

Explicit modeling for comprehension of informational, dense text:

➢ We don't do this every day: only **sometimes**, and for **short periods** of time

➢ Look over the text **ahead of time** and consider which elements and characteristics you would like to highlight. You might well jump around on the pages to address specific elements. The focus is upon the language, not 'getting through' the content.

➢ We first address **background knowledge** (activate what they already know)

➢ Teacher must model with a **shared visual source** of text

➢ When possible, have the **students mark up the text** as we do

➢ Students **read chorally with us**, following our laser pointer

➢ **Students determine which graphic organizer** will best support note-taking

➢ Consistently and repeatedly **model and label metacognitive strategies**: the **How and Why**

➢ Let **students' confusion further guide** your discussion

➢ **You decide**: is this better in guided reading groups or whole class? (most probably some of both)

Mediating processing of the text

➢ Is this fiction or non-fiction?

➢ If it's non-fiction, what do we need to consider? *(it might be hard to remember all of the facts, so we should consider taking notes)*

➢ Look at the title, captions, headings, figures, etc. Consider which graphic organizer(s) would be best for the structure of the text.

➢ Consider our current background knowledge on the topic.

➢ Remember to consistently:

- o Restate
- o Repeat
- o Form an image in my mind
- o Predict what would come next

➢ If I can't do the aforementioned actions, ***I didn't understand*** and I may need to 'get out the machete', implementing the following steps:

- o Break it into pieces
- o Find: who, did what, to whom/what?
- o Put it in my own words
- o Make a picture in my mind
- o Put back the parts I cut out
- o Continue to paraphrase the entire document as I move through

➢ Take notes as I move through the text

➢ Remember, notes are only effective if I review, restate, or otherwise do something with those notes.

*Discuss How? and Why? throughout the process

Giving them the fishing pole: explicitly teaching learning strategies[7]

➢ Not additional curriculum, but instead focus during content instruction
➢ Applicable to a broad range of learning tasks
➢ Recursive and non-linear
➢ Four **metacognitive processes**:
  • Planning & organizing
  • Manage your learning
  • Monitor
  • Evaluate
➢ Many task-based strategies within each process
➢ Ultimate Goal to empower students to use strategies **independently**

Metacognitive Processes

Strategy	Icon	Description
Planning and organizing		Plan the task or content sequence Set goals Plan how to accomplish the task
Manage your learning		Pay attention to how you learn best Arrange conditions to help you learn Patiently practice for mastery Focus attention
Monitor		Check your progress Self-monitor for comprehension Does your output make sense?
Evaluate		How well did you do? Which strategies did you apply and which worked best?

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[7] Based in part upon: Chamot A. in *Academic success for English language learners: strategies for K-12 mainstream teachers*, by Richard-Amato, P & Snow, M. 2005, Pearson Education, White Plains, NY, pp. 93-98

Task-based strategies:

Use what you know:

Strategy	Icon	Description
Use background knowledge		think about and use what you know to help yourself make associations
Make inferences		use context and what you know to figure out meaning read and listen between the lines
Predict		Look at the tables, captions, headings, bold-faced text, graphics, and so on. Predict what you anticipate the text will be about. anticipate information to come make logical guesses about what will come
Check for meaning		ask yourself if you understand 'hear' the text in your head continually keep your goals in mind ask yourself constantly if this information furthers your goal question the text work with complex sentences and how they fit together
Personalize		relate new information to your own life and experiences
Transfer/use cognates		apply linguistic knowledge of other languages to help you look for cognates
Substitute/ paraphrase		substitute the confusing words with ones that might mean the same thing, then re-read for understanding
Vocabulary		decide which words are most necessary to understand use your knowledge of prefixes, suffixes, and roots use knowledge of grammar to infer meaning read around and use context clues pay attention to cohesion words

Use your imagination

Strategy	Icon	Description
Use imagery		use or create an image in your mind or on paper
Use real objects/ role play		use real objects to represent the ideas act out the situation or use sketches to portray the ideas

Use your organizational skills

Strategy	Icon	Description
Find/apply patterns		apply a rule make a rule sound out and apply letter/sound rules
Group/ classify		relate or categorize words or ideas according to attributes
Use graphic organizers/ take notes		use or create visual representations or graphic organizers write down key ideas and words
Summarize		create a mental, oral, logographic, or written summary of the information
Use selective attention		focus on specific information scan and skim as needed

Use a variety of resources

Strategy	Icon	Description
Access information sources		use the index, glossary, Internet, dictionary, handheld dictionary, and other reference materials ask questions follow a model or process
Cooperate		work with others to complete tasks ensure you listen to other points of view confidently share your viewpoint
Use self-talk		remind yourself that you are capable break the task into parts celebrate progress and new learning

The 5 syntactic challenges for ELLs[8]

Read the examples, and then write sentences at your students' grade level and from your content areas that reflect these characteristics.

√ Passive voice
- o The colonies were increasingly affected by the new taxes. *or*
- o The experiments were performed over time.

√ Comparatives & logical connectors
- o The larger the sum of money, the more important it is to consider the reliability of the lender.
- o Even though the appearance of granules in the mixture is not in itself a problem, it does require a thorough investigation of the sterility of the lab conditions.

√ Modal auxiliaries
- o The interviewer might have asked more probing questions.
- o The interviewer could have asked more probing questions.
- o The interviewer should have asked more probing question.
- o The interviewer ought to have asked more probing questions.
- o The interviewer would have asked more probing questions. (What does this one suggest I would expect next?)

√ Verb phrases containing prepositional phrases
- o Precipitation causes flooding in low-lying areas after particularly intense downpours.
- o Warring factions often devastate populations in industrial areas after targeted bomb raids raze factories and supply posts.
- o To determine the perimeter it is necessary to measure around a rectangular polygon on at least two sides.

√ Relative clauses
- o It would be easier to chart the information that is necessary to determine the results were a sophisticated spreadsheet to be used.
- o Although it seems apparent today, a spherical earth was not understood to be fact at that time in Europe.

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[8] Spurlin, Q ('98) *Purposeful science instruction for bilingual learners*, The Journal of Texas Association of Bilingual Education 4(2): 22-35

Function words that indicate relationship in sentences

*Important: We will teach the meaning of these words in context through discussion when encountering them in text, through cloze exercises in which content text has the connectives removed and students discuss which would be appropriate to convey the idea, sentence combining activities, and so on. It is **not** effective to teach them as isolated word lists to be memorized.*

Signal words: These words indicate how thoughts relate to each other, and are *essential* components of understanding complex academic text. They need to be taught in context through analyzing sentences in which they occur and discussing the relationship of the thoughts.

Causality/ Problem, solution:

- accordingly, as a consequence, as a result, because, causes, central to, consequently, creates, defines, delineates, depends upon, due to, effectively, even if, for this reason, has resulted in, hence, if…then, in order to, in so doing, leads to, multiplies, mushrooms into, necessitates, results in, since, so, so that, then, therefore, thus

Concession:

- admittedly, although, but, even so, however, true, nevertheless, nonetheless, notwithstanding, still, yet

Conjunction:

- addition to, also, along with, and, in, joined with : **Disjunction:** either…or, neither… nor

Compare/Contrast (signal antonym):

- also, alternately, alternatively, although, apart from, as opposed to, as well as, but, by contrast, contrary to that, conversely, despite, different from, even though, fewer than, however, in contrast, in spite of this, less than, like, much as, nevertheless, nonetheless, notwithstanding, on the other hand, regardless, similar to, similarly, some…but others, still, that being said, then again, though, too, yet, whereas, which is not to say, while

Description/List/Generalization:

- additionally, again, also, and, another, first of all, for example, for instance, for one thing, furthermore, in addition, moreover, not only…but also, second, such as, to illustrate, too

Location:

- adhered to, adjacent to, around, beside, closer to, connected to, contiguous with, circling, far/farther from, here, in, inside, lies within, near, next to, outlying, over, over there, subsumed within, there, under, underneath, within

Restatement or synonym signal:

- also, as well as, by the same token, compared to, correspondingly, equally, equally so, especially, for example, in that, in other words, in the same way, is like, just as, likewise, may be compared to, reminds one of, resembles, similarly, such as, these, too

Sequence/Time:

- after, afterward, ahead of, always, as, before, beforehand, during, earlier than, finally, first of all, following, from now on, in the first place, last, later, meanwhile, next, now, originally, prior to, sooner than, subsequently, then, throughout, therefore, ultimately, which (or thus) generated, ordinal words (i.e. first second etc.), when, while

Subordinating conjunctions:

- after, although, as, as a result of, as soon as, because, before, by the time, concurrent with, due to, even, even as, even if, even though, every time, if, in case, in order to, in the event that, in that, inasmuch as, instead, insofar as, just in case, lest, no matter how, now that, once, only if, prior to, provided that, since, so, the first time, though, throughout, unless, until, when, whenever, whereas, wherever, whether, whether or not, while, why

Common prepositions:

- about, above, across, after, against, along, among, around, at, before, behind, below, beneath, beside, between, by, down, during, except, for, from, in, in front of, inside, instead of, into, like, near, of, off, on, on top of, onto, out of, outside, over, past, since, through, to, toward, under, underneath, until, up, upon, with, within, without

Language functions:

- **Social:** agree, apologize, ask for assistance or directions, ask for permission, backpedal, clarify, commanding/giving instructions, cooperate with, criticize, deny, describe, disagree, enquire/question, explain, express likes/dislikes, express obligation, express position, respond to suggestions, identify, infer, mediate, plan, predict, refuse, report, referee, request, suggest, warn, wish/hope

- **Academic:** agree, analyze, apply, ask, assert, assess, check, clarify, classify, collaborate, collect, communicate, compare, complete the exercise, conclude, confirm, construct, contrast, critique, debate, deduce, define, demonstrate, derive, describe, develop, differentiate, describe, design, disagree, discuss, distinguish, display, draw, elaborate, enact, establish, estimate, explain, evaluate, formulate, guess, hypothesize, identify, induce, illustrate, indicate, infer, inform, interpret, investigate, justify, know, label, learn, list, listen for, make, measure, model, monitor, observe, order, organize, perform, perform the task, persuade, plan, predict, preview, prioritize, problem-solve, prove, question, read, recognize, record, relate, repeat, report, research, restate, retell, review, role play, scan, score, seek information, select, sequence, skim, solve, sort, study, summarize, synthesize, take notes, test the hypothesis, use, warn, write

Sample academic text

For us to practice

Getting out the machete…

Your Skeletal System

Your **skeletal system** is the system made of all the **bones** in your body. Like your other body parts, bones are made of living cells. However they are not the only elements in your skeletal system.

There are over 200 bones in your body, many of which have many different jobs. Your bones work with your muscles to support your body and protect inner body parts. For example, your skull protects your brain. Your ribs help protect your heart and lungs.

Bone marrow is the soft tissue in the middle of long bones. It is involved in the production of thousands of red blood cells in the blood, which carry oxygen to all body cells. White blood cells are also produced in bone marrow. They help destroy harmful organisms in the body and remove dead cells.

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The Dandelion Seed[9]

For each of the following passages, note what you might choose to discuss regarding semantics and syntax with your students:

The more the seed saw, the smaller it felt.

Then, almost overnight, the life that began as one little dandelion seed ripened into many. They each became part of the wind, and were carried away.

Only one seed was left, a little dandelion seed who was afraid to let go.
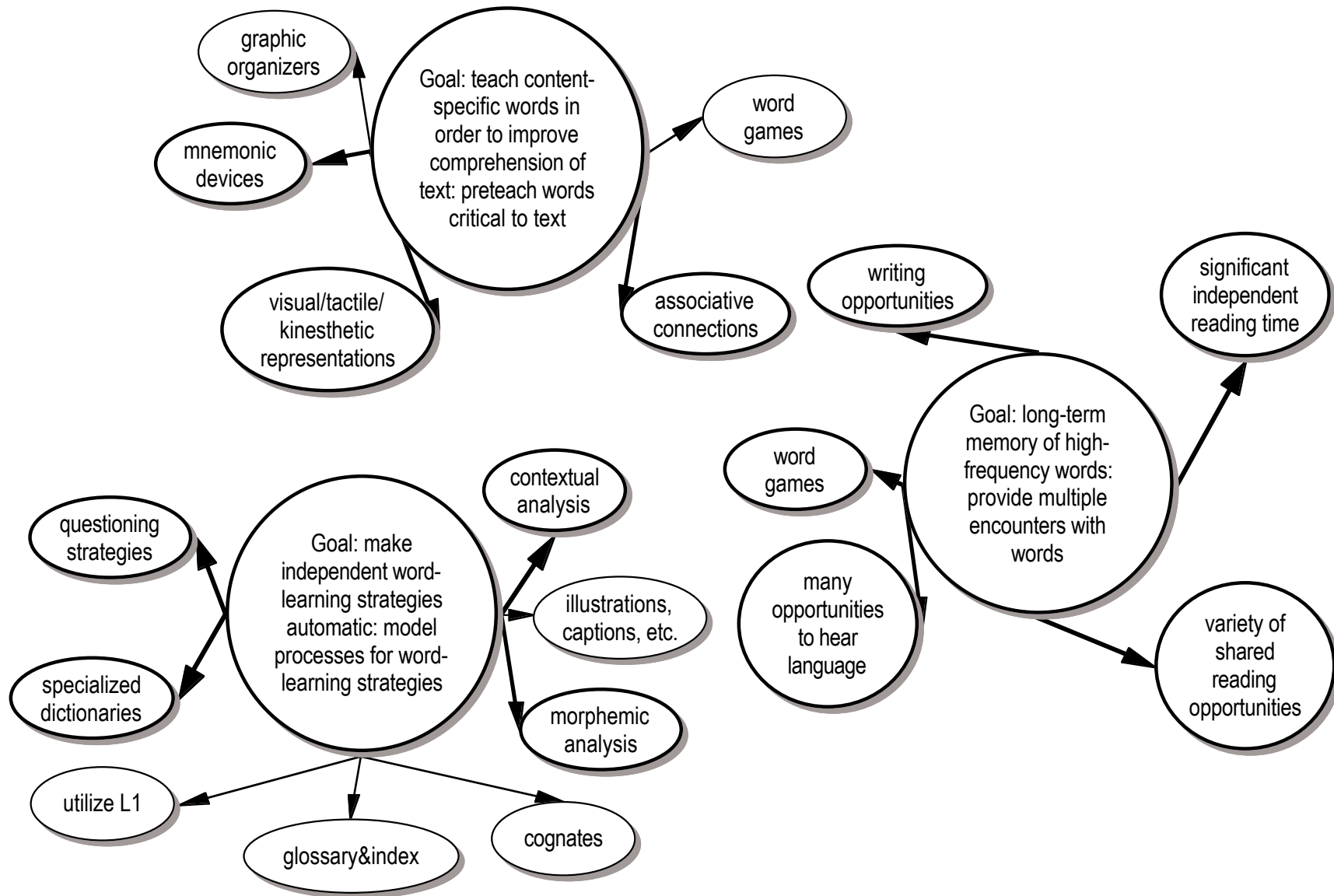
But the winter wind began to blow. The stronger it blew, the tighter the seed hung on until it felt the wind blowing right through it.

The seed landed when snow began to fall. It listened in silence as peace covered it like a blanket.

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[9] from The Dandelion Seed, Anthony, J., '97, DAWN Publications

graphic organizers

Goal: teach content-specific words in order to improve comprehension of text: preteach words critical to text

word games

mnemonic devices

visual/tactile/ kinesthetic representations

associative connections

writing opportunities

significant independent reading time

Goal: long-term memory of high-frequency words: provide multiple encounters with words

contextual analysis

word games

questioning strategies

Goal: make independent word-learning strategies automatic: model processes for word-learning strategies

illustrations, captions, etc.

many opportunities to hear language

variety of shared reading opportunities

specialized dictionaries

morphemic analysis

utilize L1

glossary&index

cognates

So here I am, crop dustin' my way into number 1210.
The old head in the front of the room was noddin' as usual.
I'm missin' my slicey.
He's headin' for a trip up north. He was gankin' papes everywhere
he could. Shazbot! Well hey, stick a fork in it at this point I say.
Fo' shizzle.
Now I'm ready to be getting' the weapons of math destruction when
I see the sheila. She's g'd up from the feet up and I'm 143in' her.
Yeah, she's off the heezie. I'm flossin'.
She stands up.
I ask her what's up?
The signal to noise ratio was low. Now I'm a gosu, but still… So I
say 10 on that, every chance I get.
After all, a 30-day-trial is never a bad idea.

And now… the questions:
✦ Who might the author be? What gives you this idea?
✦ What is the purpose for the author writing this text? What makes you think so?
✦ What is the form of this text? (i.e. recipe, report, autobiography, fictional account, etc.) What tells us this?
✦ Which words are new to you in the context in which they are used?
✦ What might this passage mean? Try to translate it into "standard" English.
✦ Which parts of the passage were the most difficult to understand? How did you figure them out?

Notes